

### **REMARKS**

Upon entry of the instant amendment, claims 1 and 3-24 will remain pending in the above-identified application and stand ready for further action on the merits.

In this Amendment, claim 1 has been amended in order to more particularly set forth the inventive discovery under consideration, and to provide easily printable versions of formulas (2), (3) and (4) which also fully agree with those originally set forth at pages 16-17 of the instant specification. As such, support for each of the amendments made herein to claim 1 can be found in the application as originally filed.

Accordingly, the present amendment to claim 1 does not introduce new matter into the application as originally filed. As such entry of the instant amendment and favorable action on the merits is earnestly solicited at present.

#### ***Claim Rejection under 35 U.S.C. § 103(a)***

Claims 1 and 3-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as being unpatentable over **Nakacho et al. WO'518** (WO 00/09518).<sup>1</sup>

Claims 1 and 3-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over **Taniguchi et al. WO'844** (WO 01/0070844).<sup>2</sup>

Reconsideration and withdraw the above outstanding rejections is respectfully requested based on the following considerations.

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<sup>1</sup> US 6,528,559, which is the National Stage of **Nakacho et al. WO'518**, is being used by USPTO as English language translation of **Nakacho et al. WO'518**.

<sup>2</sup> US 2003/0114606, which is the National Stage of **Taniguchi et al. WO'844**, is being used by USPTO as English language translation of **Taniguchi et al. WO'844**.

Legal Standard for Determining Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsisimilis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

M.P.E.P. § 2141 sets forth the guidelines in determining obviousness. First, the USPTO has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

*Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the USPTO has to provide some rationale for determining obviousness. MPEP § 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

- (a) *combining prior art elements according to known methods to yield predictable results;*
- (b) *simple substitution of one known element for another to obtain predictable results;*
- (c) *use of known technique to improve similar devices (methods, or products) in the same way;*
- (d) *applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;*
- (e) *"obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success*
- (f) *known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;*
- (g) *some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.*

As the M.P.E.P. directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See M.P.E.P. § 2143.03.

*Distinctions over the Cited Art*

In the remarks of the outstanding Office Action, it appears the USPTO has not made an assessment about whether the references teach the claimed feature that the phosphazene compound contains 80% by weight or more of cyclic trimers.

However, in the submissions filed with the USPTO on July 24, 2009, Applicants clearly argued that the content of the cyclic trimers in a cross-linked phenoxyphosphazene used in the Examples of **Nakacho et al. WO'518** is 62-75%, which is completely outside of the scope of the claimed invention. As clearly understood from the results reported in the "Supplemental Experimental Data" attached to the submissions, the flame retardant compositions of the invention were all excellent in extrudability and releasability, while the compositions of the comparative examples were all inferior in those properties.

As the USPTO pointed out in the Office Action dated December 1, 2009, **Nakacho et al. WO'518** does not expressly disclose the phosphazene compound containing 80% by weight or more of cyclic trimers. Moreover, the claimed invention shows unexpectedly advantageous effects, which could not be predicted from the teachings of **Nakacho et al. WO'518**.

On the other hand, **Taniguchi et al. WO'844** is directed to a flame-retardant composition comprising a phosphazene compound having an amino group-substituted phenyl group, an aminoalkyl group-substituted phenyl group, a hydroxyalkyl group-substituted phenyl group, a glycidyloxy group-substituted phenyl group, or a glycidyloxyalkyl group-substituted phenyl group.

In contrast, the invention of claim 1 as instantly amended is a flame retardant composition which comprises (A) at least one compound selected from the group consisting of a metal oxide represented by the specific formula and a trivalent phosphorus compound; and (B) at

least one phosphazene compound represented by the specific formula that does not include a hetero-atom containing group such as an amino group-substituted phenyl group, an aminoalkyl group-substituted phenyl group, a hydroxyalkyl group-substituted phenyl group, a glycidyloxy group-substituted phenyl group, or a glycidyloxyalkyl group-substituted phenyl group.

The paragraph [0020] of **Taniguchi et al. WO'844** (U.S. 2003/0114606) describes that the phosphazene compound with a heteroatom containing group used in the composition is good in reactivity and compatibility with an epoxy resin and considered to act as a hardener and a flame retardant for the epoxy resin, and this compound does not degrade electrical characteristics of the epoxy resin but rather can exert improved characteristics.

*[0020] A phosphazene compound of the component (B) used in the present invention is good in reactivity and compatibility with an epoxy resin and considered to act as a hardener and a flame retardant for the epoxy resin. This compound does not degrade electrical characteristics such as an insulating property, mechanical properties, adhesiveness and others of the epoxy resin, rather exerts excellent performance to improve the characteristics and properties according to a case and, in addition, further increase moisture resistance. A high reliability is therefore shown and also sustained over a long time by a molded article (a molded product) obtained by molding a flame-retardant epoxy resin composition of the present invention, for example an electronic part such as a laminate.*

In view of those descriptions, a person skilled in the art, trying to prepare a flame retardant composition based on the teachings of **Taniguchi et al. WO'844**, would not be motivated to use any phosphazene compound having no hetero-atom containing group as recited in the instant claim 1.

In the "Supplemental Experimental Data" attached to the submissions of July 24, 2009, the excellent effects (*i.e.*, being excellent in extrudability and releasability) obtained by the

compositions comprising phosphazene compounds without any *hetero-atom* containing group were demonstrated.

The claimed composition in which a specific phosphazene compound that does not include a hetero-atom containing group is used shows unexpectedly advantageous effects. Such advantageous effects of the invention could not be predicted from the teachings of **Taniguchi et al. WO'844**.

Apart from the above considerations. Applicants would also like to again draw the USPTO's attention to the fact that the gist of the instant invention resides in the combined use of the phosphazene compound and a specific kind of a metal oxide or a trivalent phosphorous compound at a specific ratio, in addition to the chemical structure of the phosphazene compound.

Neither **Nakacho et al. WO'518** nor **Taniguchi et al. WO'844** discloses, teaches or suggests that advantageous effects as mentioned above could be achieved by such a combination of the two specific components in the specific ratio. Moreover, such references, whether considered singularly or in combination with the remaining cited art references fail to provide any reason or rationale that would allow one of ordinary skill in the art to arrive at the instant invention as claimed.

In conclusion, it is submitted that the cited art of record is incapable of anticipating the instant invention as claimed, since it fails to teach or otherwise provide for each of limitations recited in pending claims 1 and 3-24, and further, that it would be unobvious for a person skilled in the art to arrive the invention recited in pending claims 1 and 3-24 from the teachings of **Nakacho et al. WO'518** or **Taniguchi et al. WO'844**. Any contentions of the USPTO to the contrary must be reconsidered at once.

**CONCLUSION**

Based on the amendments and remarks presented herein, the USPTO is respectfully requested to issue a Notice of Allowance in the matter of the present application, wherein each of instantly pending claims 1 and 3-24 are indicated to be allowable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey, Registration No. 32881 at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

By 

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